

REMARKS

Claims 2-6, 8-11, 14, 31, 32, 34, 35, 37 and 39 are as previously presented, and claims 33 and 36 are as originally filed. Claims 7, 12, and 15-30 were previously canceled. Claims 1, 13, 38, and 40 were amended; however, no new matter has been introduced.

With these amendments, claims 1-6, 8-11, 13, 14, and 31-40 are pending.

Rejections under 35 U.S.C. § 112, second paragraph

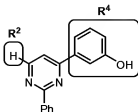
Claims 1-6, 8-11, 13, 14, and 31-39 stand rejected under 35 U.S.C. § 112, second paragraph. In particular, the Office rejected claims 1 and 13 for reciting “theoptional”. In response, Applicants amended this term to correctly read “the optional”. Applicants respectfully request reconsideration and withdrawal of 35 U.S.C. § 112, second paragraph rejections.

Rejections under 35 U.S.C. § 102

Claims 1, 11, 13, 14, 31, 33, and 40 stand rejected under 35 U.S.C. § 102 (b), and (e) as being unpatentable over numerous references. As explained below, the cited art does not anticipate the claims presented herein.

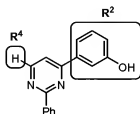
Maintained Rejections:

1. The Office maintained the 102(e) rejection in view of Nunes (WO 2005/009443) asserting that it discloses a composition of compound with Registry Number 1058628-44-6, which anticipates the claims. In particular, the Office states that “R² and R⁴ in the present compounds are equivalent and R⁴ can be aryl”. Compound with RN 1058628-44-6 has the following structure in which the moieties corresponding to R² and R⁴ of the present claims is indicated:



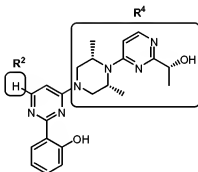
For this compound to anticipate the claims R^2 would need to be hydrogen and R^4 would need to be 3-hydroxyphenyl (see the structure above where the positions corresponding to R^2 and R^4 are circled.) But the definition R^2 in the present claims does not include hydrogen.

The Office also asserts that these positions are interchangeable, so R^4 would be hydrogen and R^2 would be 3-hydroxyphenyl:



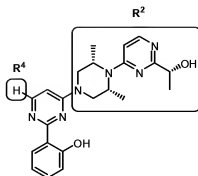
But the definition of R^4 in the present claims does not include hydrogen, nor does the definition of R^2 include “optionally substituted aryl”. Therefore, regardless of which substituent is considered R^2 and which is considered R^4 , the cited compound of Nunes does not anticipate the current claims.

2. The Office maintained the 102(b) rejection in view of **Chu-Mover** (US 6414149) asserting that compound (RN 300550-97-4) anticipates the claims because R^4 can be heterocycle and the positions corresponding to R^2 and R^4 are equivalent.



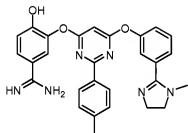
For this compound to anticipate the claims when R^4 is “optionally substituted heterocyclyl”, R^2 would have to be hydrogen. But the definition of R^2 in the present claims does not include hydrogen in the present claims.

The Office also asserts that these positions are interchangeable, so R^4 would be hydrogen and R^2 would be substituted piperazinyl:

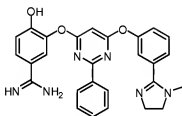


But the definition of R^4 in the present claims does not include hydrogen and the definition of R^2 does not include “optionally substituted heterocyclyl”. Therefore, the cited compound of Chu-Moyer does not anticipate the current claims.

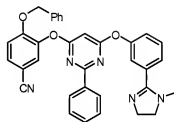
3. The Office maintained the 102(b) rejection in view of **Davey** (US 6127376) asserting that compounds in Example 1 (col. 24-25) and Examples 2-7 (col. 25-27) still anticipate the claims. Some of the representative compounds are below:



RN 1100594-48-6
(Example 1 C)



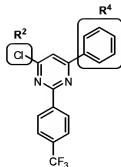
RN 274673-39-1
(Examples 1 A, and 2-7)



RN 274673-45-9
(Example 1 A)

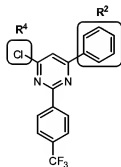
Applicants reviewed the compounds of Examples 1-7, and found that the recited compounds require both R^2 and R^4 to be phenoxy derivatives. But the definition of R^4 in the present claims does not include “optionally substituted aryloxy” or $-OR^6$ moiety. Therefore, the compounds recited in Examples 1-7 do not anticipate the current claims.

4. The Office maintained the 102(b) rejection in view of **Murata** (JP 2001/139560) alleging that compound with Registry No. 340008-58-4 still anticipates the claims because “ R^2 and R^4 in the present claims are equivalent and R^4 can be aryl”. The compound RN 340008-58-4 has the following structure:



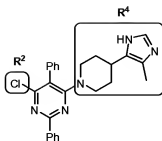
For this compound to anticipate the claims R^2 would need to be halogen and R^4 would need to be phenyl (see the structure above where the positions corresponding to R^2 and R^4 are circled.) But the definition of R^2 in the present claims does not include halogen.

The Office also asserts that these positions are interchangeable, so R^4 would be halogen and R^2 would be phenyl:



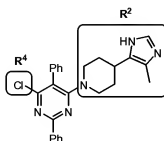
But the definition of R^4 does not include halogen, nor does the definition of R^2 include “optionally substituted aryl” in the present claims. Therefore, regardless which substituent is considered R^2 and which is considered R^4 , the cited compound of Murata does not anticipate the current claims.

5. The Office maintained the 102(b) rejection in view of Ahmad (US 6887870) alleging that compound with Registry No. 335063-13-3 still anticipates the claims because “ R_2 and R_4 in the present claims are equivalent and R_4 can be heterocycle”. The compound RN 335063-13-3 has the following structure:



For this compound to anticipate the claims R^2 would need to be halogen and R^4 would need to be substituted piperidinyl (see the structure above where the positions corresponding to R^2 and R^4 are circled.) But the definition of R^2 in the present claims does not include halogen.

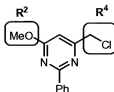
The Office also asserts that these positions are interchangeable, so R^4 would be halogen and R^2 would be substituted piperidinyl:



But, the definition of R^4 in the present claims does not include halogen, nor does the definition of R^2 include “optionally substituted heterocycle”. Therefore, the claims are not anticipated by Ahmad.

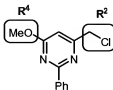
6. The Office maintained the 102(b) rejection in view of Kampe (US 4859670) asserting that compositions with “RN numbers 111921-72-3, 111921-21-2... and 111943-51-2” still anticipate the claims.

For the compound RN 111921-72-3 to anticipate the claims, R^2 would need to be methoxy (*e.g.*, $-OR^6$, and R^6 is unsubstituted alkyl) and R^4 would need to be “optionally substituted alkyl”:



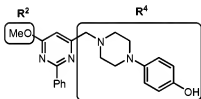
But the definition of R^2 in the present claims does not encompass $-OMe$ (because R^6 cannot be unsubstituted alkyl), nor does the definition of R^4 include “optionally substituted alkyl”. On the

other hand, for this compound to anticipate the claims if the positions of R^2 and R^4 were reversed, R^2 would need to be “optionally substituted alkyl” and R^4 would need to be alkoxy:

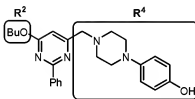


But the definition of R^4 in the present claims does not encompass alkoxy, nor does the definition of R^2 include “optionally substituted alkyl”. Therefore, this compound does not anticipate the current claims.

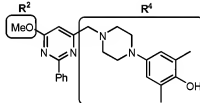
The Office also cited the following compounds:



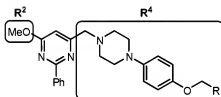
RN 111921-21-2



RN 111921-25-6

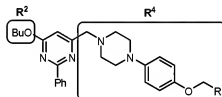


RN 111921-26-7



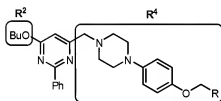
R = (2R,4S)-2-(2,4-dichlorophenyl)-2-(1H-1,2,4-triazol-1-ylmethyl)-1,3-dioxolan-4-yl

RN 111920-67-3



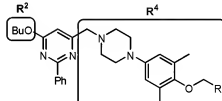
R = 2-(2,4-dichlorophenyl)-2-(1H-imidazol-1-ylmethyl)-1,3-dioxolan-4-yl

RN 111920-68-4



R = 2-(2,4-dichlorophenyl)-2-(1H-1,2,4-triazol-1-ylmethyl)-1,3-dioxolan-4-yl

RN 111920-69-5



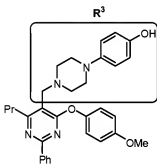
R = 2-(2,4-dichlorophenyl)-2-(1H-imidazol-1-ylmethyl)-1,3-dioxolan-4-yl

RN 111920-75-3

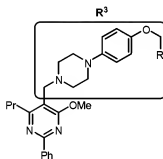
For these compounds to anticipate the claims, R² would need to be alkoxy (e.g., -OR⁶, and R⁶ is unsubstituted alkyl) and R⁴ would need to be heterocyclalkyl substituted with 4-hydroxyphenyl or derivatives thereof. But the definition of Q¹ in the present claims does not include a 4-hydroxyphenyl substituent on an “optionally substituted heterocyclalkyl” group; *i.e.*, Q¹ can only be aryl and cannot be substituted aryl (e.g., 4-hydroxyphenyl). In addition, the definition of R² in the present claims does not encompass unsubstituted alkoxy (e.g., -OMe or -OBu) because R⁶ does not include unsubstituted alkyl.

For these compounds to anticipate the claims if the positions of R² and R⁴ reversed, R² would need to be “optionally substituted heterocyclalkyl” and R⁴ would need to be alkoxy. But R⁴ does not encompass alkoxy nor does R² encompass “optionally substituted heterocyclalkyl”. Therefore, these compounds do not anticipate the current claims.

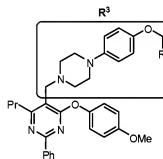
The Office also cited the following compounds:



RN 111921-44-9



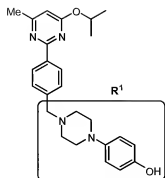
R = 2-(2,4-dichlorophenyl)-2-(1H-imidazol-1-ylmethyl)-1,3-dioxolan-4-yl
RN 111920-90-2



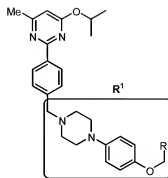
R = 2-(2,4-dichlorophenyl)-2-(1H-imidazol-1-ylmethyl)-1,3-dioxolan-4-yl
RN 111943-51-2

For these compounds to anticipate the claims, R³ would need to be heterocyclalkyl (*i.e.*, piperazinylmethyl) substituted with 4-hydroxyphenyl or derivatives thereof. But the definition of R³ in the present claims does not include heterocyclalkyl. Therefore, these three compounds do not anticipate the claims.

Lastly, the Office cited:



RN 111921-48-3



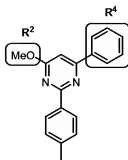
R = 2-(2,4-dichlorophenyl)-2-(1H-imidazol-1-ylmethyl)-1,3-dioxolan-4-yl
RN 111920-95-7

For these compounds to anticipate the claims, R¹ would need to be heterocyclalkyl (i.e., piperazinylmethyl) substituted with 4-hydroxyphenyl or derivatives thereof. However, the definition of R¹ in the present claims does not include heterocyclalkyl.

Therefore, none of the thirteen (13) compounds of Kampe cited by the Office anticipate the claims.

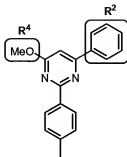
7. The Office maintained the 102(b) rejection in view of Seiler (EP 0136976) asserting that the Applicants failed to make any comments. Applicants respectfully disagree and submit that this rejection was addressed in the previous response (mailed on July 27, 2010) at page 26, lines 18-24. Nevertheless, Applicants will reiterate their arguments again here:

Seiler discloses compounds for regulating plant growth. There is no disclosure of a pharmaceutically acceptable composition or a formulation in a pharmaceutically acceptable vehicle. In addition, the compound RN 77232-23-6 cited by the Office does not anticipate the claims.



For this compound to anticipate the claims R^2 would need to be methoxy (e.g., $-OR^6$, and R^6 is unsubstituted alkyl) and R^4 would need to be phenyl (see the structure above where the positions corresponding to R^2 and R^4 are circled.) But the definition of R^2 in the present claims does not include $-OMe$ because R^6 does not include unsubstituted alkyl.

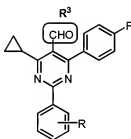
Even if the positions of R^2 and R^4 are reversed, R^2 would need to be “optionally substituted aryl” and R^4 would need to be alkoxy:



But the definition of R^4 in the present claims does not include alkoxy, nor does the definition of R^2 include “optionally substituted aryl”. Therefore, this compound of Seiler does not anticipate the current claims.

New Grounds of Rejection:

8. The Office rejected the claims in view of **Fujikawa** (US5026708) asserting six (6) compounds that anticipate the claims. The compounds have the following structure:

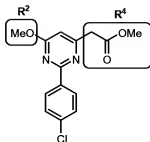


R = H	RN 122930-78-3
R = 3-Cl	RN 122930-80-7
R = 4-OMe	RN 122930-81-8
R = 4-Me	RN 122930-82-9
R = 4-Ph	RN 122930-83-0
R = 3-CF ₃	RN 122930-84-1

For these compounds to anticipate the claims, R^3 would need to be formyl. but the definition of R^3 in the present claims does not include formyl. Therefore, Fujikawa does not anticipate the claims.

9. The Office rejected the claims in view of **Howe** (J. Med. Chem, 1972, 15(10), 1040-1045) citing compound with Registry No. 19899-98-0. For the compound to anticipate the

claims, R² would need to be methoxy (e.g., -OR⁶, and R⁶ is unsubstituted alkyl) and R⁴ would need to be -R¹²-C(O)R¹⁵:



But the definition of R² in the present claims does not encompass -OMe because R⁶ does not include unsubstituted alkyl. Thus, Howe does not anticipate the present claims.

For all of the above reasons, Applicants submit that the claims are not anticipated by the cited references. Reconsideration and withdrawal of rejections under 35 U.S.C. § 102 (b), and (c) is respectfully requested.

Rejections under 35 U.S.C. § 103(a)

Claims 1-6, 8-11, 13, 14, and 31-39 stand rejected under 35 U.S.C. § 103(a) as being obvious over several references. Applicants respectfully disagree for the following reasons:

1, 2, 4, 5, 6 and 7. The Office maintained the 103(a) rejection in view of Davey (US 6127376) and Kampe (US 4859670), and issued new rejections in view of Murata (JP 2001/139560), Fujikawa (US5026708), Howe (J. Med. Chem, 1972, 15(10), 1040-1045), and Santilli (US 3498984) asserting that the claimed compounds are alkyl homologs and/or position isomers of the cited compounds and thus obvious to the skilled chemist for the same utility. But as is evident from the discussion of these publications above, the compounds of of these publications are neither alkyl homologs nor positional isomers of the claimed compounds. Thus, the compounds of the prior art are not similar structures and not expected to have similar properties to those claimed. A person of skill in the art would not be motivated to modify the prior art compounds to arrive to the presently claimed matter based on the teaching of the above-listed references.

In addition, the present application includes biological activity data of the claimed compositions in Figures 1A-1O that demonstrate the activity in Gal4-chimera-reporter gene assay. These results indicate that the claimed compositions show significant activity in this

assay. Figures 2, 3, 4A and 4B disclose additional biological activity. For example, Figures 4A and 4B show that the claimed compositions are able to selectively activate Nurrl1/RXR heterodimers but have minimal ability to directly activate RXR. The prior art does not teach that the compounds disclosed therein have activity in Gal4-chimera-reporter gene assay or that they are able to selectively activate Nurrl1/RXR heterodimers. There is nothing in the prior art that would make obvious to one of skill in the art that the compounds of the prior art could or should be modified in a manner that results in the compounds recited in the present claims or that such compounds would have activity in the Gal4-chimera-reporter gene assay. Because a compound and all of its properties are one, the present claims, therefore, cannot be obvious. *In re Papesch*, 315 F.2d 381, 391, 137 USPQ 43, 51 (CCPA 1963) (“From the standpoint of patent law, a compound and all its properties are inseparable.”).

3. The Office also maintained the 103(a) rejection in view of Seiler (EP 0136976) asserting that the Applicants failed to make any comments. Applicants respectfully disagree and submit that this rejection was addressed in the previous response (mailed on July 27, 2010) at page 28, lines 13-20. Nonetheless, Seiler discloses compounds that are regulators of plant growth. Seiler does not disclose or suggest pharmaceutically acceptable compositions or formulations in a pharmaceutically acceptable vehicle. The teaching of Seiler is insufficient to make the presently claimed pharmaceutical composition obvious because there is no suggestion that the composition for regulating plant growth could or should be modified in a manner to give a pharmaceutical composition. Nor is there anything in the art to suggest that the composition for regulating plant growth would have pharmaceutical utility.

Therefore, one of skill in the art, having either one of these references at hand, would not arrive at the claimed compositions. As a result, reconsideration and withdrawal of the rejection of the claims under 35 U.S.C. 103(a) is respectfully requested.

Objectionable Claims

Claims 1-6, 8-11, 13, 14, and 31-36 were objected to as directed to both elected and non-elected subject matter. Applicants amended the claims in the Response submitted on August 5, 2009 to remove the non-elected matter. The applicants believe that current claims do not recite non-elected matter; the claims only elected subject matter. Applicants respectfully request withdrawal of the claim objections.

In light of the all above arguments, the Applicant respectfully requests reconsideration and withdrawal of the rejections of the pending claims. If the Examiner believes it to be helpful, the Examiner is invited to contact the undersigned representative by telephone at (312) 913-0001.

Date: December 20, 2010

Telephone: 312-913-0001
Facsimile: 312-913-0002

Respectfully submitted,

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